### Dell Inc.

**PowerEdge C6420 (Intel Xeon Gold 6230T, 2.10GHz)**

**CPU2017 License:** 55  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.

#### Hardware

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon Gold 6230T</td>
</tr>
<tr>
<td>Max MHz.</td>
<td>3900</td>
</tr>
<tr>
<td>Nominal</td>
<td>2100</td>
</tr>
<tr>
<td>Enabled</td>
<td>40 cores, 2 chips, 2 threads/core</td>
</tr>
<tr>
<td>Orderable</td>
<td>1.2 chips</td>
</tr>
<tr>
<td>Cache L1</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>L2:</td>
<td>1 MB I+D on chip per core</td>
</tr>
<tr>
<td>L3:</td>
<td>27.5 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>384 GB (12 x 32 GB 2Rx4 PC4-2933Y-R)</td>
</tr>
<tr>
<td>Storage</td>
<td>1 x 480 GB SATA SSD</td>
</tr>
<tr>
<td>Other:</td>
<td>None</td>
</tr>
</tbody>
</table>

#### Software

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS:</td>
<td>Ubuntu 18.04.2 LTS</td>
</tr>
<tr>
<td></td>
<td>kernel 4.15.0-45-generic</td>
</tr>
<tr>
<td>Compiler</td>
<td>C/C++: Version 19.0.1.144 of Intel C/C++</td>
</tr>
<tr>
<td></td>
<td>Compiler Build 20181018 for Linux;</td>
</tr>
<tr>
<td></td>
<td>Fortran: Version 19.0.1.144 of Intel Fortran</td>
</tr>
<tr>
<td></td>
<td>Compiler Build 20181018 for Linux</td>
</tr>
<tr>
<td>Parallel</td>
<td>No</td>
</tr>
<tr>
<td>Firmware</td>
<td>Version 2.1.8 released Apr-2019</td>
</tr>
<tr>
<td>File System</td>
<td>ext4</td>
</tr>
<tr>
<td>System State</td>
<td>Run level 5 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers</td>
<td>64-bit</td>
</tr>
<tr>
<td>Peak Pointers</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other: Memory allocator</td>
<td>jemalloc memory allocator V5.0.1</td>
</tr>
</tbody>
</table>

#### Test Result

<table>
<thead>
<tr>
<th>Spec Benchmark</th>
<th>Specrate2017_int_base</th>
<th>Specrate2017_int_peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench_r</td>
<td>172</td>
<td>203</td>
</tr>
<tr>
<td>gcc_r</td>
<td>188</td>
<td>216</td>
</tr>
<tr>
<td>mcf_r</td>
<td>152</td>
<td>151</td>
</tr>
<tr>
<td>omnetpp_r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>xalancbmk_r</td>
<td>265</td>
<td>301</td>
</tr>
<tr>
<td>x264_r</td>
<td>272</td>
<td></td>
</tr>
<tr>
<td>deepsjeng_r</td>
<td>189</td>
<td></td>
</tr>
<tr>
<td>leela_r</td>
<td>173</td>
<td></td>
</tr>
<tr>
<td>exchange2_r</td>
<td></td>
<td></td>
</tr>
<tr>
<td>xz_r</td>
<td>153</td>
<td></td>
</tr>
</tbody>
</table>

**Test Date:** Mar-2019  
**Hardware Availability:** Apr-2019  
**Software Availability:** Feb-2019
SPEC CPU2017 Integer Rate Result

Dell Inc.
PowerEdge C6420 (Intel Xeon Gold 6230T, 2.10GHz)

SPECrate2017_int_base = 225
SPECrate2017_int_peak = 235

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>500.perlbench_r</td>
<td>80</td>
<td>719</td>
<td>177</td>
<td>718</td>
<td>177</td>
<td>717</td>
<td>178</td>
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<td>624</td>
<td>204</td>
<td>627</td>
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<td>626</td>
<td>203</td>
</tr>
<tr>
<td>502.gcc_r</td>
<td>80</td>
<td>603</td>
<td>188</td>
<td>596</td>
<td>190</td>
<td>609</td>
<td>186</td>
<td>80</td>
<td>525</td>
<td>216</td>
<td>525</td>
<td>216</td>
<td>528</td>
<td>214</td>
</tr>
<tr>
<td>505.mcf_r</td>
<td>80</td>
<td>427</td>
<td>303</td>
<td>430</td>
<td>301</td>
<td>430</td>
<td>301</td>
<td>80</td>
<td>429</td>
<td>302</td>
<td>428</td>
<td>302</td>
<td>427</td>
<td>303</td>
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<tr>
<td>520.omnetpp_r</td>
<td>80</td>
<td>693</td>
<td>152</td>
<td>672</td>
<td>152</td>
<td>694</td>
<td>151</td>
<td>80</td>
<td>692</td>
<td>152</td>
<td>693</td>
<td>151</td>
<td>694</td>
<td>151</td>
</tr>
<tr>
<td>523.xalanbmk_r</td>
<td>80</td>
<td>330</td>
<td>256</td>
<td>334</td>
<td>253</td>
<td>331</td>
<td>255</td>
<td>80</td>
<td>308</td>
<td>274</td>
<td>311</td>
<td>272</td>
<td>311</td>
<td>272</td>
</tr>
<tr>
<td>525.x264_r</td>
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<td>453</td>
<td>311</td>
<td>450</td>
<td>310</td>
<td>452</td>
</tr>
<tr>
<td>531.deepsjeng_r</td>
<td>80</td>
<td>485</td>
<td>189</td>
<td>484</td>
<td>189</td>
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<td>189</td>
<td>80</td>
<td>484</td>
<td>189</td>
<td>485</td>
<td>189</td>
<td>485</td>
<td>189</td>
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<tr>
<td>541.leela_r</td>
<td>80</td>
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<td>179</td>
<td>755</td>
<td>175</td>
<td>746</td>
<td>178</td>
</tr>
<tr>
<td>548.exchange2_r</td>
<td>80</td>
<td>526</td>
<td>399</td>
<td>526</td>
<td>399</td>
<td>526</td>
<td>399</td>
<td>80</td>
<td>525</td>
<td>399</td>
<td>525</td>
<td>400</td>
<td>524</td>
<td>400</td>
</tr>
<tr>
<td>557.xz_r</td>
<td>80</td>
<td>566</td>
<td>153</td>
<td>565</td>
<td>153</td>
<td>567</td>
<td>152</td>
<td>80</td>
<td>565</td>
<td>153</td>
<td>565</td>
<td>153</td>
<td>565</td>
<td>153</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes
The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes
Stack size set to unlimited using "ulimit -s unlimited"

General Notes
Environment variables set by runcpu before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2017/lib/ia32:/home/cpu2017/lib/intel64:/home/cpu2017/je5.0.1-32:/home/cpu2017/je5.0.1-64"

Binaries compiled on a system with 1x Intel Core i9–7900X CPU + 32GB RAM
memory using Redhat Enterprise Linux 7.5
NA: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.
Yes: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 3>/proc/sys/vm/drop_caches
runcpu command invoked through numactl i.e.:

(Continued on next page)
**SPEC CPU2017 Integer Rate Result**

**Dell Inc.**

**PowerEdge C6420 (Intel Xeon Gold 6230T, 2.10GHz)**

<table>
<thead>
<tr>
<th>SPECrate2017_int_peak = 235</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECrate2017_int_base = 225</td>
</tr>
</tbody>
</table>

**CPU2017 License:** 55  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.

**General Notes (Continued)**

- `numactl --interleave=all runcpu <etc>`
- `jemalloc`, a general purpose malloc implementation
- built with the RedHat Enterprise 7.5, and the system compiler gcc 4.8.5

**Platform Notes**

- BIOS settings:
- ADDDC setting disabled
- Sub NUMA Cluster enabled
- Virtualization Technology disabled
- DCU Streamer Prefetcher enabled
- System Profile set to Custom
- CPU Performance set to Maximum Performance
- C States set to Autonomous
- C1E disabled
- Uncore Frequency set to Dynamic
- Energy Efficiency Policy set to Performance
- Memory Patrol Scrub disabled
- Logical Processor enabled
- CPU Interconnect Bus Link Power Management disabled
- PCI ASPM L1 Link Power Management disabled
- Sysinfo program /home/cpu2017/bin/sysinfo
- Rev: r5974 of 2018-05-19 9bcde8f2999c33d61f64985e45859ea9
- running on intel-sut Fri May 3 15:08:22 2019

**SUT (System Under Test) info as seen by some common utilities.**

For more information on this section, see https://www.spec.org/cpu2017/Docs/config.html#sysinfo

From /proc/cpuinfo
- model name: Intel(R) Xeon(R) Gold 6230T CPU @ 2.10GHz
  - 2 "physical id"s (chips)
  - 80 "processors"
- cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)
  - cpu cores: 20
  - siblings: 40
  - physical 0: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28
  - physical 1: cores 0 1 2 3 4 8 9 10 11 12 16 17 18 19 20 24 25 26 27 28

From lscpu:
- Architecture: x86_64
- CPU op-mode(s): 32-bit, 64-bit
- Byte Order: Little Endian
- CPU(s): 80

(Continued on next page)
SPEC CPU2017 Integer Rate Result

Dell Inc.

PowerEdge C6420 (Intel Xeon Gold 6230T, 2.10GHz)

SPECrater2017_int_base = 225
SPECrater2017_int_peak = 235

CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Mar-2019
Hardware Availability: Apr-2019
Software Availability: Feb-2019

Platform Notes (Continued)

On-line CPU(s) list: 0-79
Thread(s) per core: 2
Core(s) per socket: 20
Socket(s): 2
NUMA node(s): 4
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Gold 6230T CPU @ 2.10GHz
Stepping: 7
CPU MHz: 3508.615
BogoMIPS: 4200.00
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 28160K
NUMA node0 CPU(s): 0,4,8,12,16,20,24,28,32,36,40,44,48,52,56,60,64,68,72,76
NUMA node1 CPU(s): 1,5,9,13,17,21,25,29,33,37,41,45,49,53,57,61,65,69,73,77
NUMA node2 CPU(s): 2,6,10,14,18,22,26,30,34,38,42,46,50,54,58,62,66,70,74,78
NUMA node3 CPU(s): 3,7,11,15,19,23,27,31,35,39,43,47,51,55,59,63,67,71,75,79

Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtsscp
lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc cpuid
aperfmprefl pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg fma cx16
xptr pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt aes xsave avx f16c rdrand
lahf_lm abm 3dnowprefetch cpuid_fault epb cat_l3 cdp_l3 invpcid_single ssbd mba ibrs
ibpb stibp ibrsenhanced tpr_shadow vnmi flexpriority ept vpid fsgsbase tsc_adjust
bm1 hle avx2 smep bmi2 erms invpcid rtm cmq mpx rdt_a avx512f avx512dq rdseed adx
smap clflushopt clwb intel_pt avx512cd avx512bw avx512vl xsavesopt xsavec xgetbv1
xsavec qcm_llc qcm_occup_llc qcm_mbb_total qcm_mbb_local dtherm ida arat pln pts pku
ospke avx512_vnni flush_lld arch_capabilities

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a
physical chip.
available: 4 nodes (0-3)
node 0 cpus: 0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64 68 72 76
node 0 size: 95166 MB
node 0 free: 94924 MB
node 1 cpus: 1 5 9 13 17 21 25 29 33 37 41 45 49 53 57 61 65 69 73 77
node 1 size: 96764 MB
node 1 free: 96523 MB
node 2 cpus: 2 6 10 14 18 22 26 30 34 38 42 46 50 54 58 62 66 70 74 78
node 2 size: 96743 MB

(Continued on next page)
SPEC CPU2017 Integer Rate Result

Dell Inc.

PowerEdge C6420 (Intel Xeon Gold 6230T, 2.10GHz)

SPECrate2017_int_base = 225
SPECrate2017_int_peak = 235

CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

Test Date: Mar-2019
Hardware Availability: Apr-2019
Software Availability: Feb-2019

Platform Notes (Continued)

<table>
<thead>
<tr>
<th>node</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>distance:</td>
<td>10</td>
<td>21</td>
<td>11</td>
<td>21</td>
</tr>
<tr>
<td>0:</td>
<td>21</td>
<td>10</td>
<td>21</td>
<td>11</td>
</tr>
<tr>
<td>1:</td>
<td>11</td>
<td>21</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>2:</td>
<td>21</td>
<td>11</td>
<td>21</td>
<td>10</td>
</tr>
<tr>
<td>3:</td>
<td>21</td>
<td>11</td>
<td>21</td>
<td>10</td>
</tr>
</tbody>
</table>

From /proc/meminfo
MemTotal: 394687280 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /usr/bin/lsb_release -d
Ubuntu 18.04.2 LTS

debian_version: buster/sid
os-release:
  NAME="Ubuntu"
  VERSION="18.04.2 LTS (Bionic Beaver)"
  ID=ubuntu
  ID_LIKE=debian
  PRETTY_NAME="Ubuntu 18.04.2 LTS"
  VERSION_ID="18.04"
  HOME_URL="https://www.ubuntu.com/"
  SUPPORT_URL="https://help.ubuntu.com/"

uname -a:
  Linux intel-sut 4.15.0-45-generic #48-Ubuntu SMP Tue Jan 29 16:28:13 UTC 2019 x86_64
  x86_64 x86_64 GNU/Linux

Kernel self-reported vulnerability status:

CVE-2017-5754 (Meltdown): Not affected
CVE-2017-5753 (Spectre variant 1): Mitigation: __user pointer sanitization
CVE-2017-5715 (Spectre variant 2): Mitigation: Enhanced IBRS, IBPB

run-level 5 May 3 14:05

SPEC is set to: /home/cpu2017

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 ext4 439G 20G 398G 5% /

(Continued on next page)
## Platform Notes (Continued)

Additional information from dmidecode follows. **WARNING:** Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

- BIOS Dell Inc. 2.1.8 04/30/2019
- Memory:
  - 11x 00AD00B300AD HMA84GR7CJR4N-WM 32 GB 2 rank 2933
  - 1x 00AD063200AD HMA84GR7CJR4N-WM 32 GB 2 rank 2933
  - 4x Not Specified Not Specified

(End of data from sysinfo program)

## Compiler Version Notes

```
CC  502.gcc_r(peak)
```

Intel(R) C Intel(R) 64 Compiler for applications running on IA-32, Version
19.0.1.144 Build 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

```
CC  500.perlbench_r(base) 502.gcc_r(base) 505.mcf_r(base, peak)
      525.x264_r(base, peak) 557.xz_r(base, peak)
```

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.1.144 Build 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

```
CC  500.perlbench_r(peak)
```

Intel(R) C Intel(R) 64 Compiler for applications running on Intel(R) 64,
Version 19.0.1.144 Build 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

```
CXXC 523.xalancbmk_r(peak)
```

Intel(R) C++ Intel(R) 64 Compiler for applications running on IA-32, Version
19.0.1.144 Build 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.
Dell Inc.  
PowerEdge C6420 (Intel Xeon Gold 6230T, 2.10GHz)

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Tested by: Dell Inc.  
Test Date: Mar-2019  
Hardware Availability: Apr-2019  
Software Availability: Feb-2019

Compiler Version Notes (Continued)

CXXC 520.omnetpp_r(base, peak) 523.xalancbmk_r(base) 531.deepsjeng_r(base, peak) 541.leela_r(base, peak)

Intel(R) C++ Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.1.144 Build 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

FC 548.exchange2_r(base, peak)

Intel(R) Fortran Intel(R) 64 Compiler for applications running on Intel(R) 64, Version 19.0.1.144 Build 20181018
Copyright (C) 1985-2018 Intel Corporation. All rights reserved.

Base Compiler Invocation

C benchmarks:
icc -m64 -std=c11

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Base Portability Flags

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -DSPEC_LP64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -DSPEC_LP64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64
531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64
SPEC CPU2017 Integer Rate Result

Dell Inc.
PowerEdge C6420 (Intel Xeon Gold 6230T, 2.10GHz)  

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<tr>
<th>SPECrate2017_int_base</th>
<th>SPECrate2017_int_peak</th>
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<tbody>
<tr>
<td>225</td>
<td>235</td>
</tr>
</tbody>
</table>

CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.
Test Date: Mar-2019
Hardware Availability: Apr-2019
Software Availability: Feb-2019

Base Optimization Flags

C benchmarks:
- Wl, -z, muldefs -xCORE-AVX512 -ipo -03 -no-prec-div
- qopt-mem-layout-trans=4
- L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64
- lqkmalloc

C++ benchmarks:
- Wl, -z, muldefs -xCORE-AVX512 -ipo -03 -no-prec-div
- qopt-mem-layout-trans=4
- L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64
- lqkmalloc

Fortran benchmarks:
- Wl, -z, muldefs -xCORE-AVX512 -ipo -03 -no-prec-div
- qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte
- L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64
- lqkmalloc

Peak Compiler Invocation

C benchmarks (except as noted below):
icc -m64 -std=c11

502.gcc_r.icc -m32 -std=c11 -L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/ia32_lin

C++ benchmarks (except as noted below):
icpc -m64

523.xalancbmk_r.icpc -m32 -L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/ia32_lin

Fortran benchmarks:
ifort -m64

Peak Portability Flags

500.perlbench_r: -DSPEC_LP64 -DSPEC_LINUX_X64
502.gcc_r: -D_FILE_OFFSET_BITS=64
505.mcf_r: -DSPEC_LP64
520.omnetpp_r: -DSPEC_LP64
523.xalancbmk_r: -D_FILE_OFFSET_BITS=64 -DSPEC_LINUX
525.x264_r: -DSPEC_LP64

(Continued on next page)
SPEC CPU2017 Integer Rate Result

Dell Inc.
PowerEdge C6420 (Intel Xeon Gold 6230T, 2.10GHz)

CPU2017 License: 55
Test Sponsor: Dell Inc.
Tested by: Dell Inc.

SPECrate2017_int_base = 225
SPECrate2017_int_peak = 235

Test Date: Mar-2019
Hardware Availability: Apr-2019
Software Availability: Feb-2019

Peak Portability Flags (Continued)

531.deepsjeng_r: -DSPEC_LP64
541.leela_r: -DSPEC_LP64
548.exchange2_r: -DSPEC_LP64
557.xz_r: -DSPEC_LP64

Peak Optimization Flags

C benchmarks:
500.perlbench_r: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=4
-fno-strict-overflow
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64
-lqkmalloc

502.gcc_r: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=4
-L/usr/local/je5.0.1-32/lib -ljemalloc

505.mcf_r: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64
-lqkmalloc

525.x264_r: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4 -fno-alias
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64
-lqkmalloc

557.xz_r: Same as 505.mcf_r

C++ benchmarks:
520.omnetpp_r: -Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
-qopt-mem-layout-trans=4
-L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64
-lqkmalloc

523.xalancbmk_r: -Wl,-z,muldefs -prof-gen(pass 1) -prof-use(pass 2) -ipo
-xCORE-AVX512 -O3 -no-prec-div -qopt-mem-layout-trans=4
-L/usr/local/je5.0.1-32/lib -ljemalloc

531.deepsjeng_r: Same as 520.omnetpp_r

(Continued on next page)
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<table>
<thead>
<tr>
<th>SPECrate2017_int_peak</th>
<th>SPECrate2017_int_base</th>
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</thead>
<tbody>
<tr>
<td>235</td>
<td>225</td>
</tr>
</tbody>
</table>

**SPEC CPU2017 Integer Rate Result**

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**Peak Optimization Flags (Continued)**

541.leela_r: Same as 520.omnetpp_r

Fortran benchmarks:
- Wl,-z,muldefs -xCORE-AVX512 -ipo -O3 -no-prec-div
- qopt-mem-layout-trans=4 -nostandard-realloc-lhs -align array32byte
- L/usr/local/IntelCompiler19/compilers_and_libraries_2019.1.144/linux/compiler/lib/intel64
- lqkmalloc

The flags files that were used to format this result can be browsed at:

You can also download the XML flags sources by saving the following links:

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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

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